

Lord Associates, Inc.

Environmental Consulting & Licensed Site Professional Services

1506 Providence Highway - Suite 30
Norwood, MA 02062-4647

Voice: 781.255.5554
Fax: 781.255.5535
www.lordenv.com

August 7, 2012

Kimberly N. Tisa
U.S. Environmental Protection Agency
5 Post Office Square, Suite 100
Mail Code: OSRR07-2
Boston, MA 02109-3912

Reference: **Worcester State University**
PCB Abatement Plan Modification for the Learning Resource Center

Dear Kim:

Based on laboratory analysis of brick samples collected after window removal and PCB abatement, it is evident that the remedial goal (i.e., < 1 ppm) cannot be achieved with the previously-approved method. Therefore, this letter report serves as a request for modification of the original plan. Additionally, after the removal of the windows, it became evident that caulk was used to seal the windows on the interior.

All 23 of the large windows (3'6" x 20') and one smaller window (3'6" x 6'6") have been removed. These windows are designated A through Y (there is no window I). Four additional windows (7' x 2') still require removal. Upon removal of the windows, interior and exterior caulk beads were observed. The caulk was removed manually and residual caulk was removed using the previously-approved Zep gel. After removal of the caulk and the initial cleaning attempt, Lord Associates, Inc. (LAI) personnel collected confirmatory brick dust samples from underneath the former exterior caulk bead from the left, right and bottoms of the windows using a hammer drill on July 20 and 23, 2012. The window designations are included in the attached drawing. These samples were submitted to Alpha Analytical Laboratory (Alpha) of Westborough, Massachusetts for analysis of PCBs via EPA Method 8082 after being extracted via EPA Method 3540C. The top of the window opening is structural steel at the approximate roof level. The steel beams were sampled using hexane wipes via the standard wipe test.

Laboratory analytical data indicated that all of the wipe samples collected from the tops of the windows were below the applicable standard of <1µg/100cm³. However, laboratory analytical data indicated that the confirmatory brick samples generally contained PCBs above the applicable standard (<1 ppm). See the attached data **Tables 1 & 2** for a summary of confirmatory PCB analysis with a comparison to the applicable standards.

LAI reported the laboratory results to the abatement contractor, and they subsequently re-cleaned the former window areas with Zep gel. After this re-cleaning, some caulk staining could still be observed. LAI collected additional brick dust samples on August 2

and 3, 2012. These brick samples were collected adjacent to the previous sampling locations.

Laboratory analytical data indicates that residual PCB concentrations remain above the applicable standard (<1 ppm) in the brick underneath the former beads of caulk.

Proposed Encapsulation & Monitoring Plan

To determine if the PCBs in the exterior window caulking had leached into the adjacent building materials, samples of interior block and exterior brick located immediately adjacent to the windows were collected by UEC on December 14, 2011 and February 7, 2012 by manual chiseling. The samples were extracted via EPA Method 3540C and analyzed via EPA Method 8082 by EMSL Analytical, Inc. These results indicate that PCBs in the brick and interior block samples collected immediately adjacent to the caulk were present at concentrations less than 1 ppm. No PCBs were detected in the brick and interior block samples collected at a distance of 3-4 inches from the caulk.

The exterior of the existing building will be encapsulated with a new overclad system consisting of 2 layers of metal panels. The inside layer is made up of a 2" thick insulated metal panel while the outside layer is a composite wall panel that acts as a rainscreen assembly. The former outside caulk joint of the original window will be covered with the new window jamb on the outside corner and will be covered with wood blocking and metal panning on the inside corner (as shown in details 2 and 5 on sheet A4.1 and on the attached window detail). The new window will be sealed in place with Sikaflex-2c NS (a non-PCB containing sealant). Interior masonry will be encapsulated with a minimum of two coats of epoxy coating to a distance of 10" from the new window interior (6" to the interior of the former interior caulk line). The epoxy paint to be used will be Sikagard 62. Following encapsulation of PCB-contaminated surfaces, post-encapsulation wipe sampling and adjacent interior block sampling will be conducted to determine the effectiveness of the encapsulation. PCB containing caulk will be scraped from the window frames and residual caulk will be removed with Zep gel prior to the installation of new windows and encapsulation.

Post abatement monitoring will be conducted, including wipe sampling and air monitoring. Initial post-abatement indoor air sampling will be conducted in accordance with EPA Method TO-4A or TO-10A. Wipe sampling of indoor surfaces shall be performed on a surface area basis by the standard wipe test. Chemical extraction for PCBs shall be conducted using Methods 3500B/3540C and chemical analysis for PCBs will be conducted using Method 8082. A draft deed restriction and draft long-term monitoring implementation plan (MMIP) will be provided to EPA after the completion of the PCB abatement project.

Worcester State University requires the use of the Learning Resource Center (subject building) for the start of the school year on September 6, 2012. WSU and their contractors are willing to meet all necessary regulatory requirements in order to finish re-

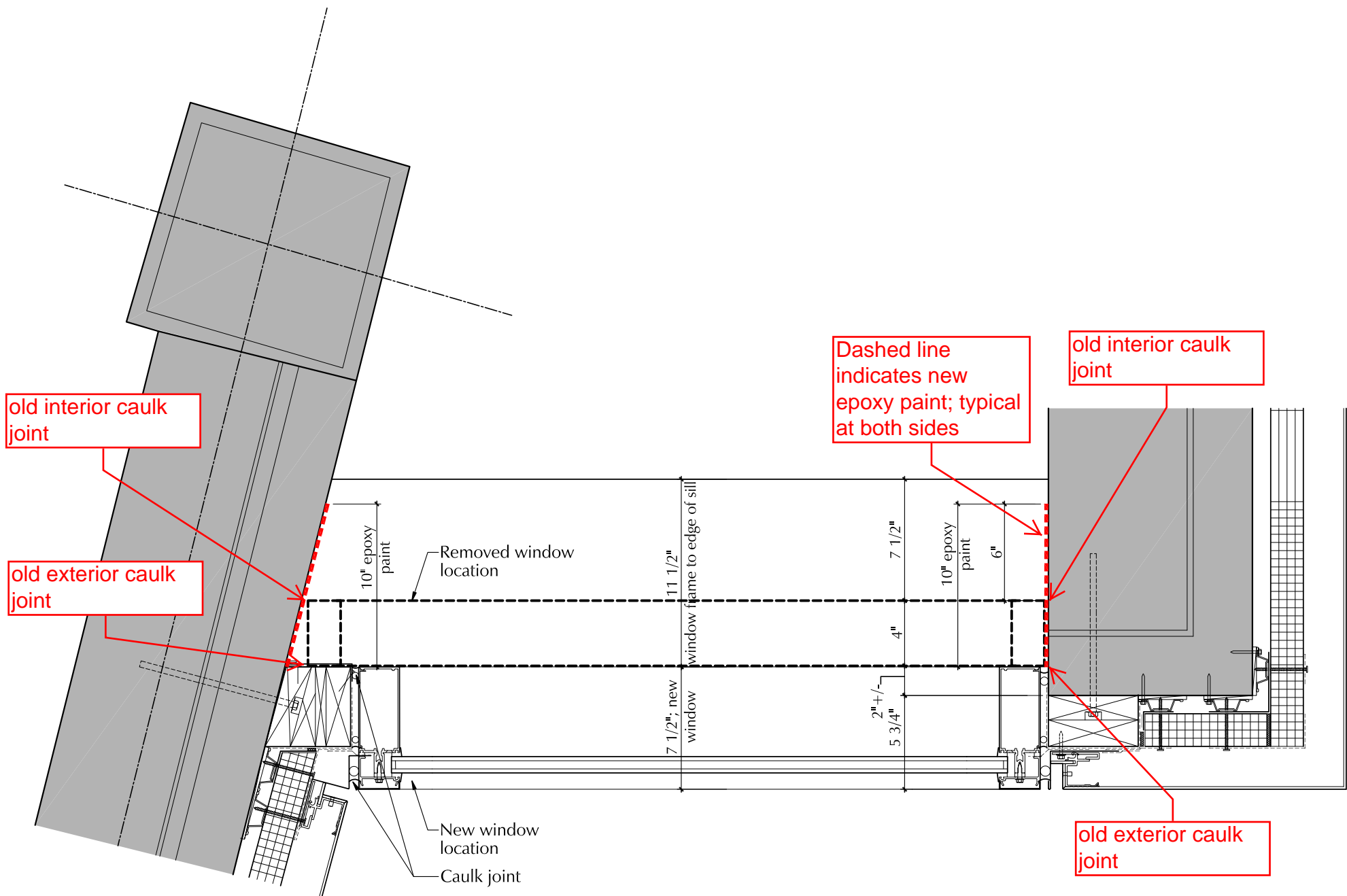
modeling and conducting this PCB abatement project within their tight time frame. We are grateful to you for expediting the approval of this modified plan.

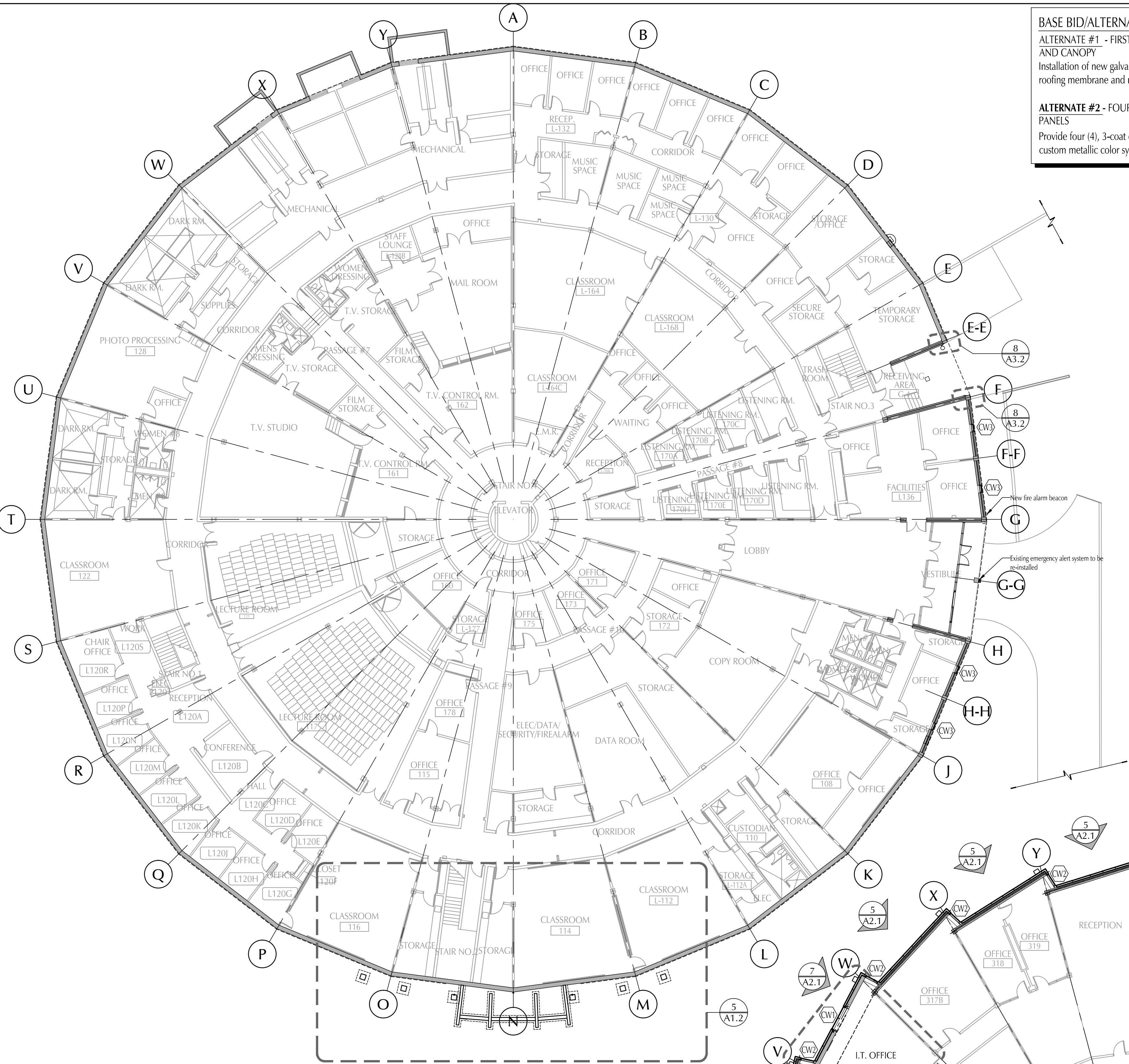
Thank you for your quick review.
Sincerely,

Lord Associates, Inc.

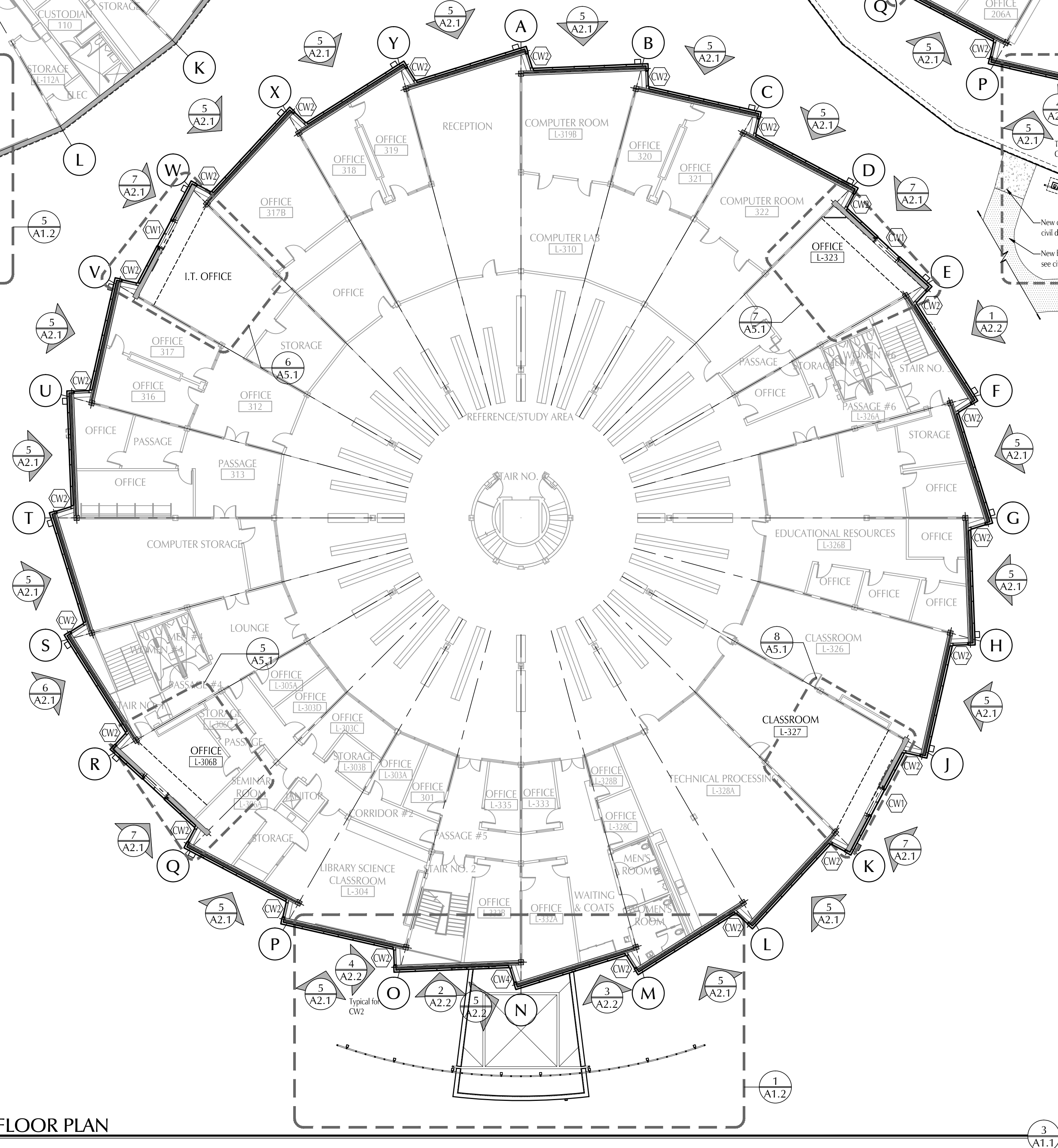
A handwritten signature in black ink, appearing to read 'O. Leek', written over a faint dotted line.

Oliver P. Leek
Project Manager

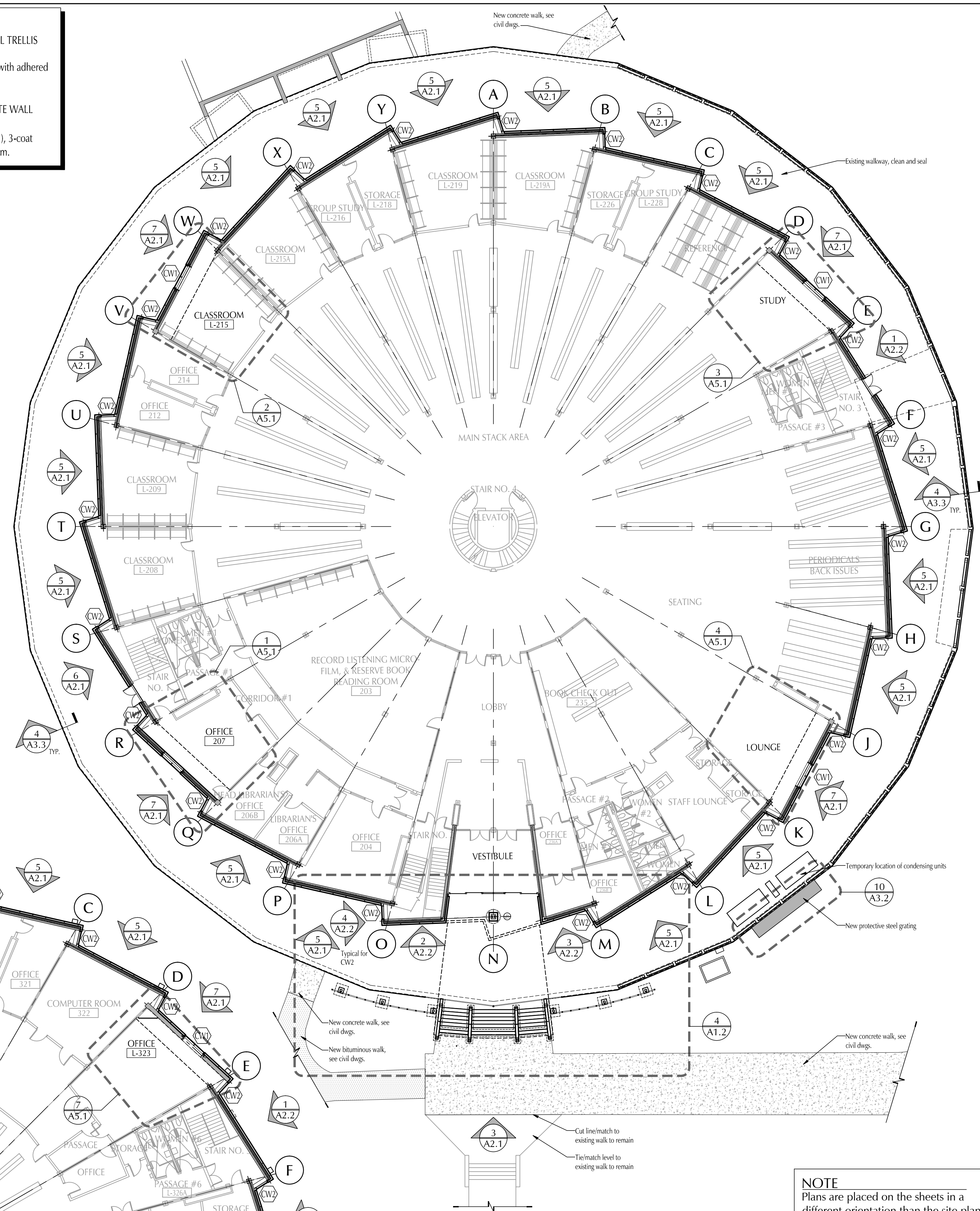


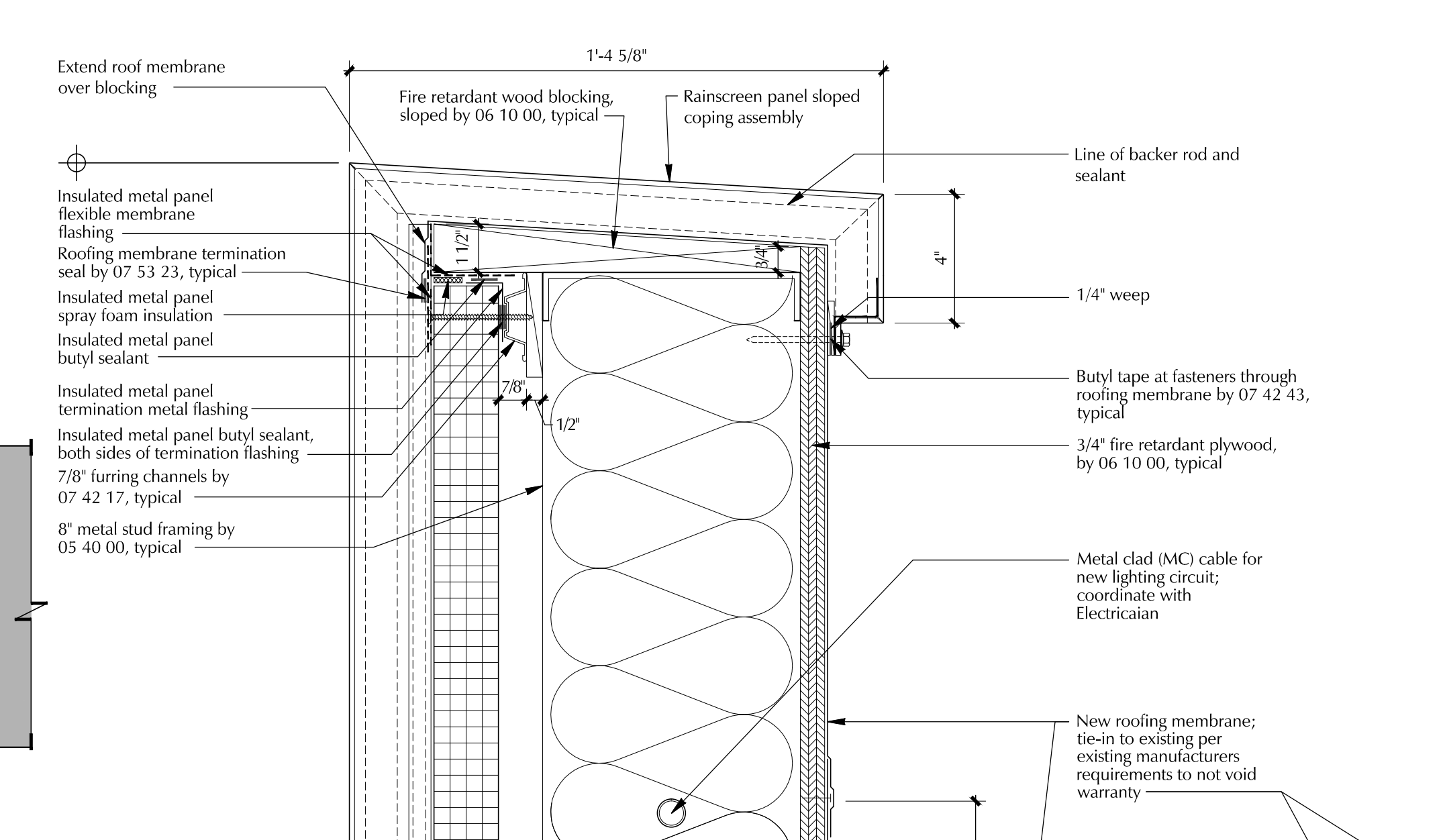


GROUND FLOOR PLAN
SCALE: 1/16" = 1'-0"

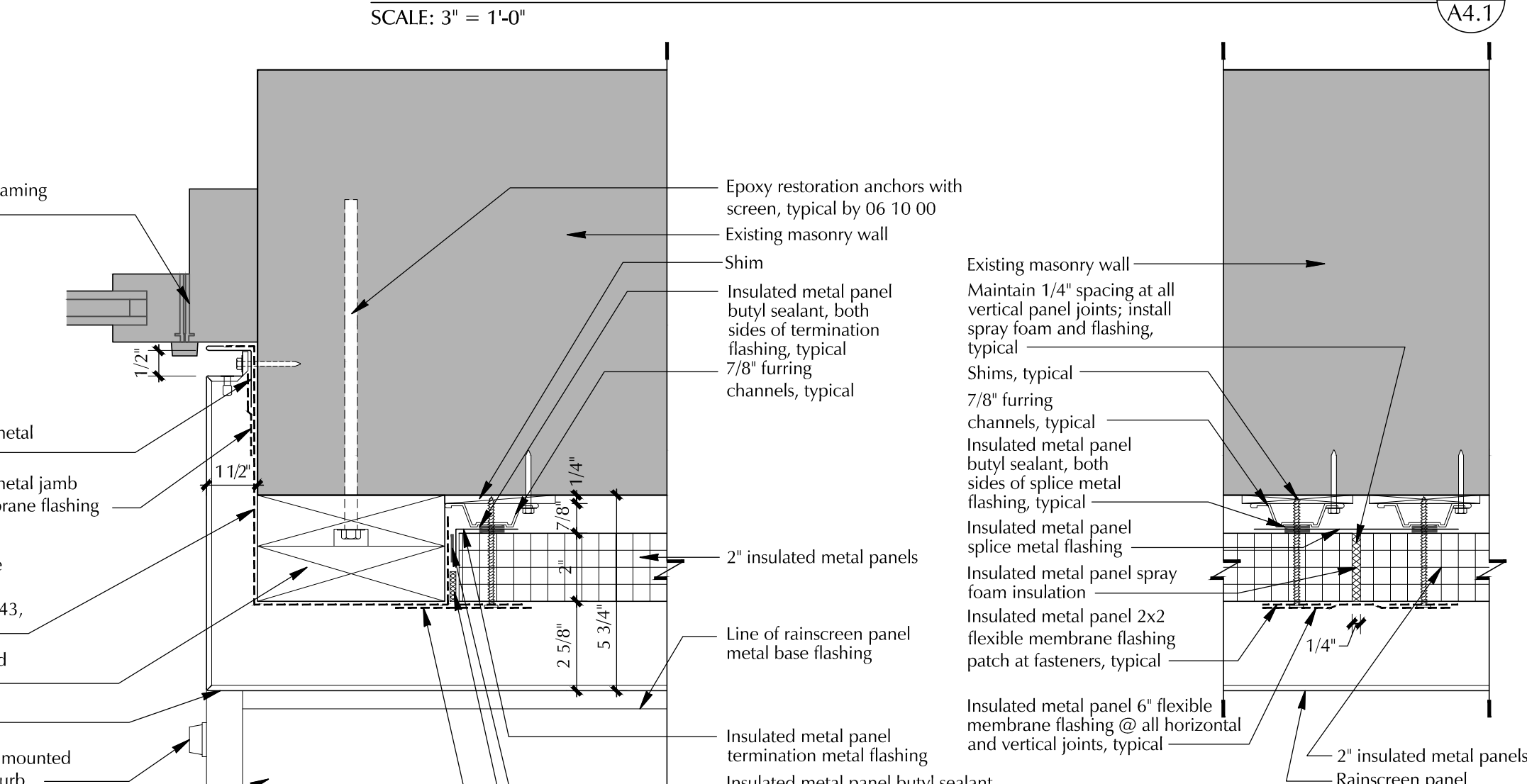


SECOND FLOOR PLAN
SCALE: 1/16" = 1'-0"

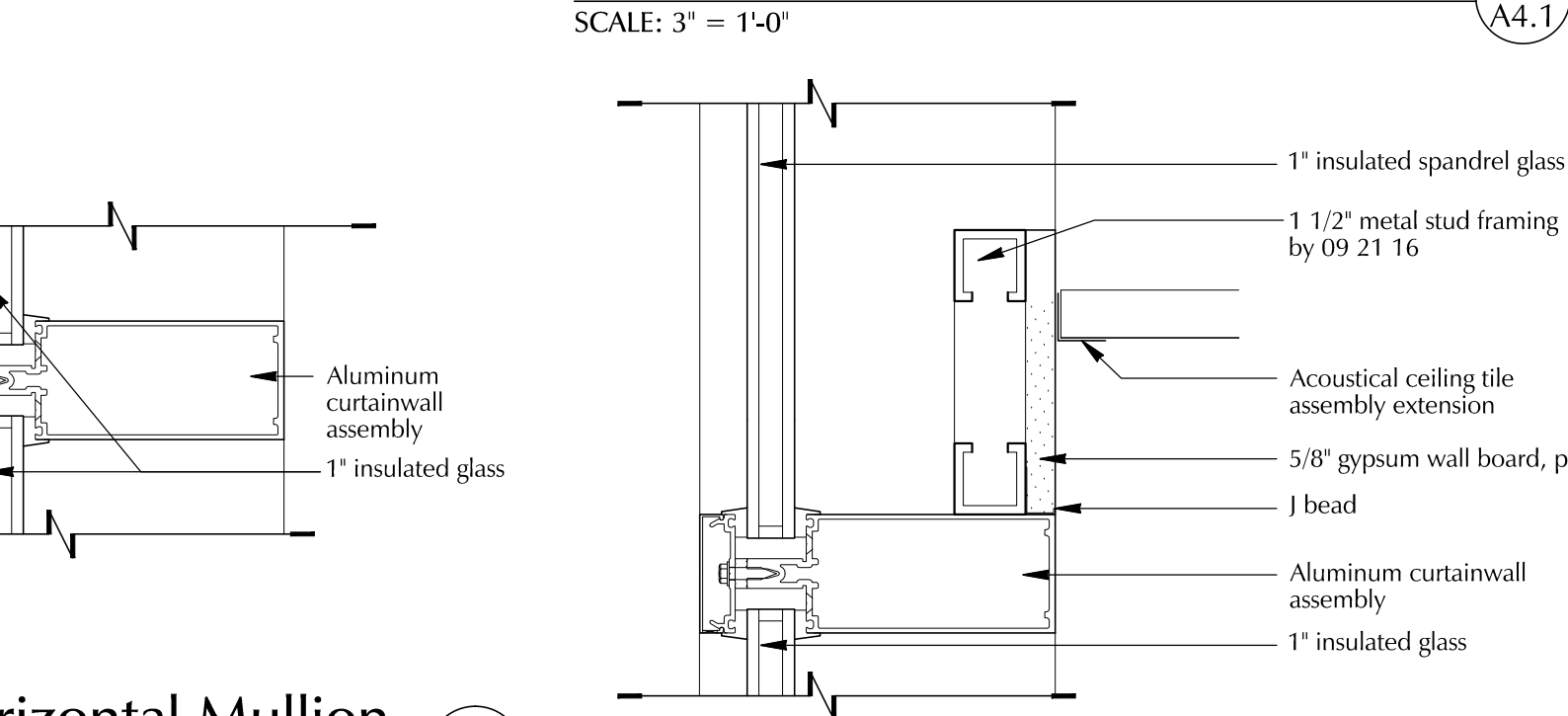




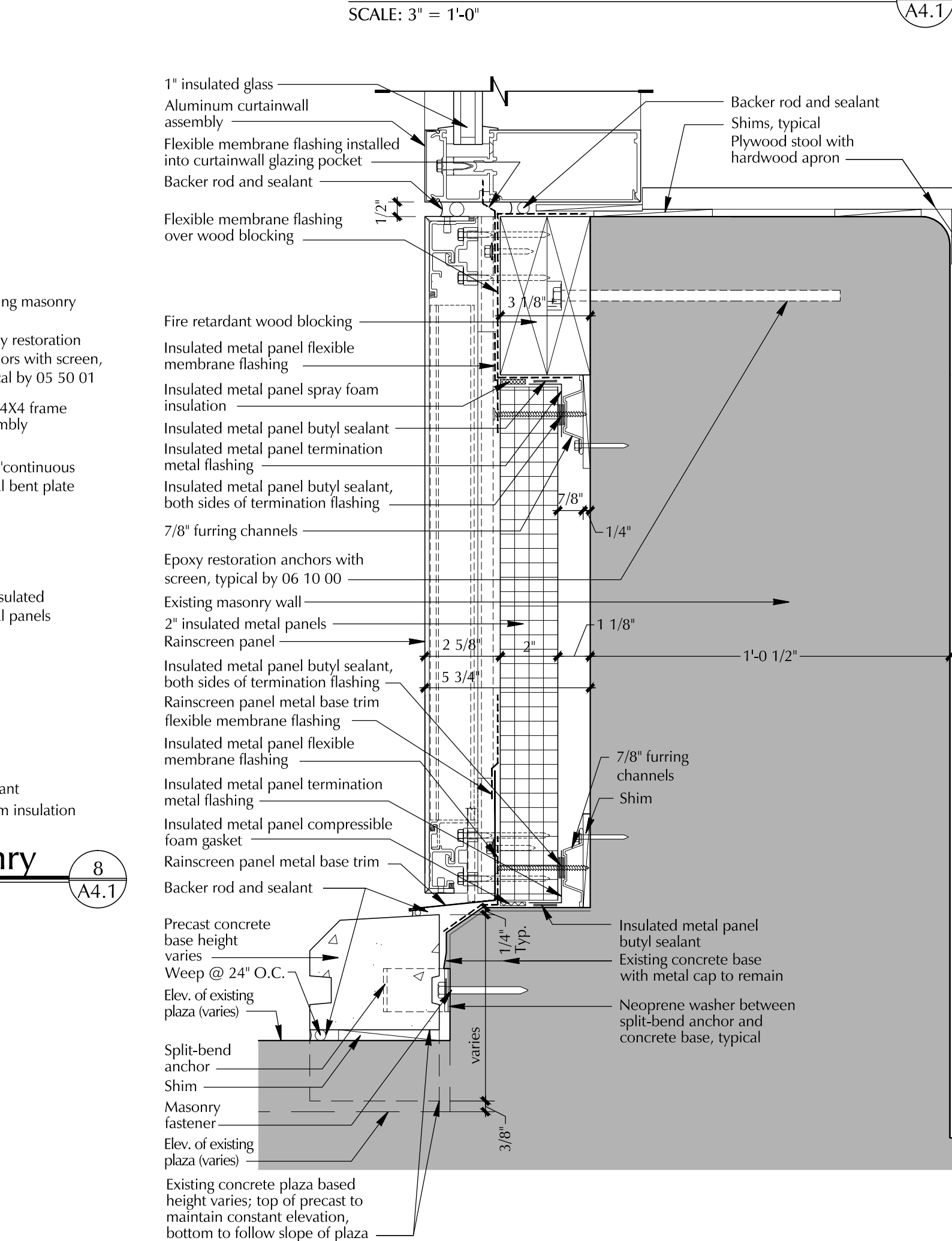
Typical Parapet @ Roof Tie-in to Existing Roof Assembly



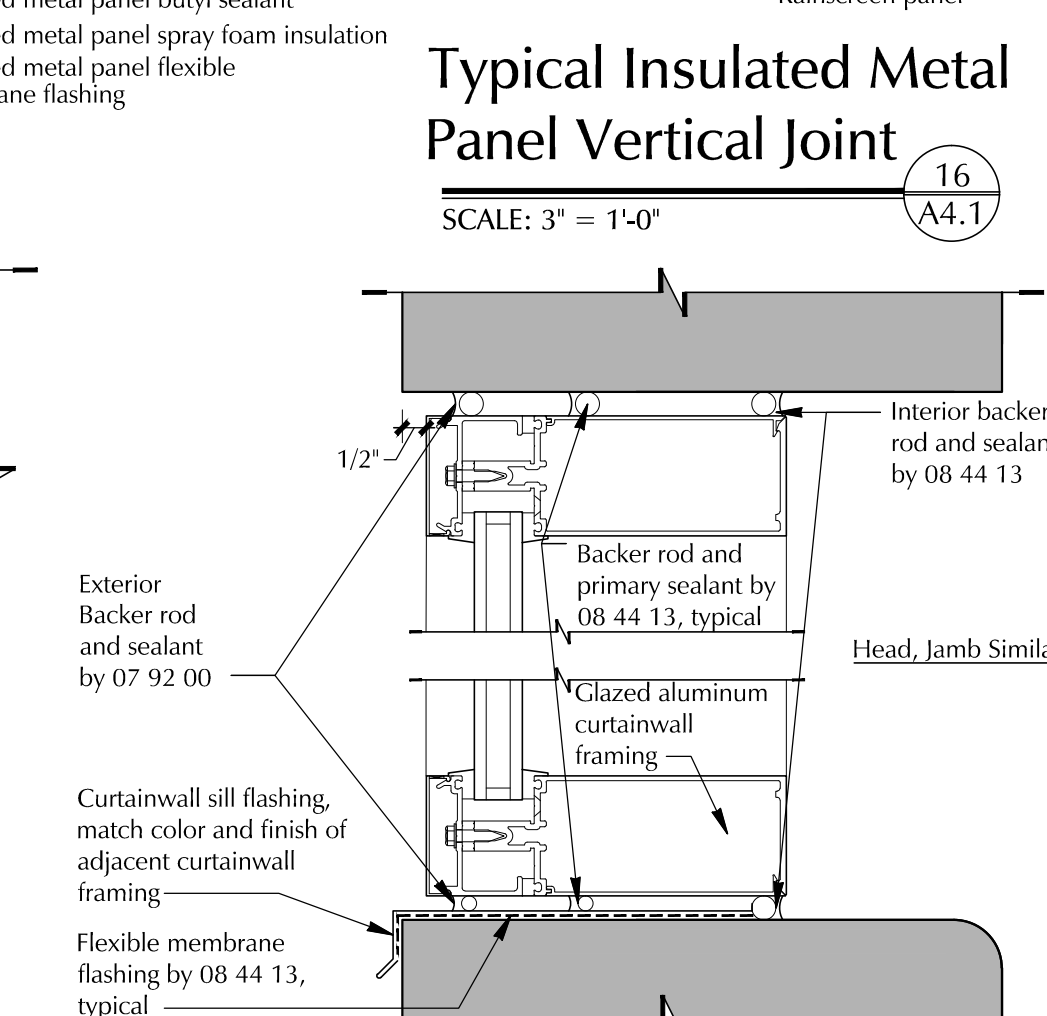
Typical Head at Curtainwall Type 2 11



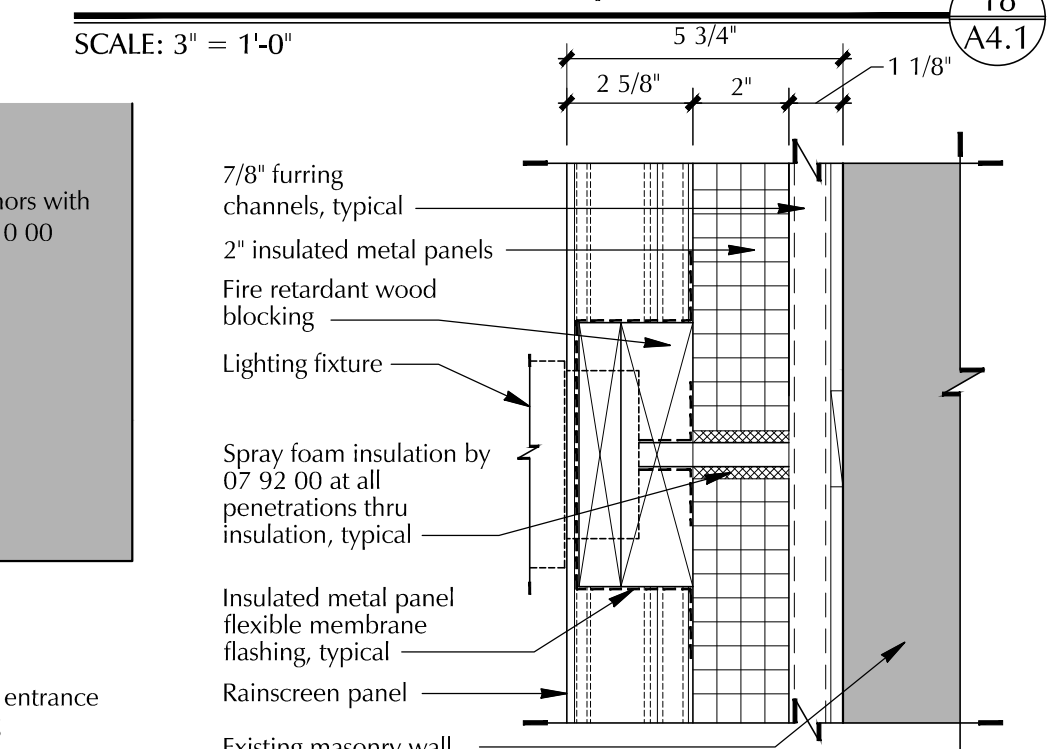
Typical Intermediate Head at Curtainwall Type 2



Typical Base at Curtainwall Type 2



Head/Jamb/Sill at Ground Floor Curtainwall Assembly



Light Mounting Detail

[illegible]

A4.1

84.1

[illegible]

Table 1
Worcester State University, Learning Resource Center
486 Chandler Street, Worcester, MA

Sample ID (Window)	Analytical Results (µg/kg)									Date
	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Aroclor 1262	Aroclor 1268	
O-Bottom	ND	ND	ND	ND	ND	ND	1,090	ND	ND	7/20/2012
O-Left	ND	ND	ND	ND	ND	ND	20,000	ND	ND	7/20/2012
O-Right	ND	ND	ND	ND	ND	ND	11,300	ND	ND	7/20/2012
P-Bottom	ND	ND	ND	ND	ND	ND	203	ND	ND	7/23/2012
P-Left	ND	ND	ND	ND	ND	ND	31,400	ND	ND	7/23/2012
P-Right	ND	ND	ND	ND	ND	ND	3,480	ND	ND	7/23/2012
Q-Bottom	ND	ND	ND	ND	ND	ND	1,160	ND	ND	7/20/2012
Q-Left	ND	ND	ND	ND	ND	ND	571	ND	ND	7/20/2012
Q-Right	ND	ND	ND	ND	ND	ND	5,550	ND	ND	7/20/2012
R-Bottom	ND	ND	ND	ND	ND	ND	826	ND	ND	7/20/2012
R-Left	ND	ND	ND	ND	ND	ND	4,740	ND	ND	7/20/2012
R-Right	ND	ND	ND	ND	ND	ND	29,200	ND	ND	7/20/2012
Y-Bottom	ND	ND	ND	ND	ND	ND	2,050	ND	ND	7/23/2012
Y-Left	ND	ND	ND	ND	ND	ND	40,100	ND	ND	7/23/2012
Y-Right	ND	ND	ND	ND	ND	ND	5,280	ND	ND	7/23/2012
Remedial Goal	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	

Sample ID (Window)	Analytical Results (µg/kg)									Date
	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Aroclor 1262	Aroclor 1268	
O-Bottom	ND	ND	ND	ND	ND	ND	533	ND	ND	8/2/2012
O-Left	ND	ND	ND	ND	ND	ND	12,700	ND	ND	8/2/2012
O-Right	ND	ND	ND	ND	ND	ND	7,260	ND	ND	8/2/2012
P-Bottom	ND	ND	ND	ND	ND	ND	257	ND	ND	8/2/2012
P-Left	ND	ND	ND	ND	ND	ND	9,500	ND	ND	8/2/2012
P-Right	ND	ND	ND	ND	ND	ND	4,160	ND	ND	8/2/2012
Q-Bottom	ND	ND	ND	ND	ND	ND	614	ND	ND	8/2/2012
Q-Left	ND	ND	ND	ND	ND	ND	15,800	ND	ND	8/2/2012
Q-Right	ND	ND	ND	ND	ND	ND	8,520	ND	ND	8/2/2012
Remedial Goal	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	

Notes:
1.) ND = Non Detect

Table 2
Worcester State University, Learning Resource Center
486 Chandler Street, Worcester, MA

[illegible]